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Performance Technical Report

Under ONR Grant

N00014-90-J-1526

by

T. Theodore Fujita

July 8, 1991

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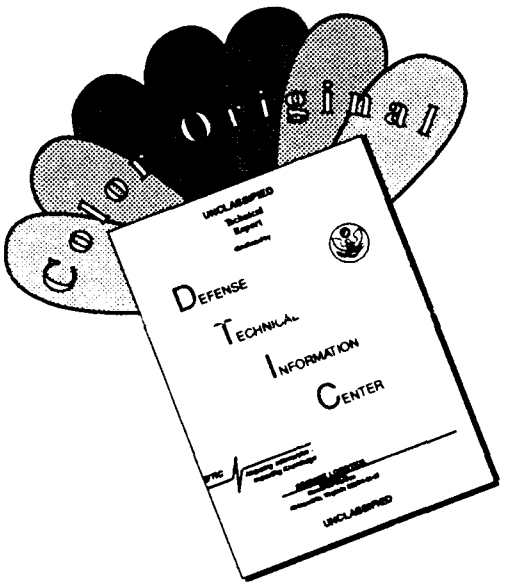

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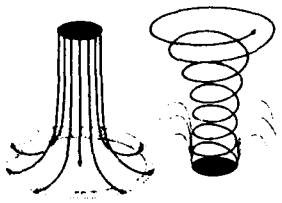

T. Theodore Fujita
5727 Maryland Avenue, Chicago, Illinois 60637
Home: (312) 288-3045 • Office: (312) 702-8112

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The purpose of the research under this grant is to generate the data base of all cyclones in the northern hemisphere, north of the latitude 20° North for determining the oceanic regions where cyclones develop (deepening of the central pressure) and weaken (filling of the central pressure). Specific regions of the NAVY's interest are North Pacific, North Atlantic, and Arctic Oceans. We already know that some oceanic regions are more dangerous than others in term of rapid intensification of cyclones which often move out of the upwind continent.

The data base is obtained by examining the 6-hourly National Meteorological Center (NMC) surface maps and the 12-hourly surface maps from Japan Meteorological Agency (JMA) The imput data for generating the magnetic cyclone tape are latitude (LA*), longitude (LO*), central pressure (PC*) and the radii of the PC* + 16 mb and PC* + 8 mb isobars surrounding or in the vicinity of the cyclone center.

Once we identify a cyclone to be qualified as a "cyclone" (with 10 m/s or higher maximum winds inside), it is identified by the serial number (NO), year (YR), month (MO), day (DY), and Greenwich time. Due to the inevitable error in estimating the cyclone parameters, input data are smoothed first in computing the longitude (LO), latitude (LA), and the central pressure (CP) which are expressed by the decimal-point values. From the configuration of isobars, cyclone windspeed (CW) in m/sec is computed as a function of the 6-hourly maptime.

These input values after smoothing are used in computing the differencial values (finite differences) such as pressure deepening (PD) in mb/6hrs, pressure filling (-PD), and the windspeed intensification (WI) m/sec in 6 hours. These parameters, both input and computed, are tabulated along with the consecutive number of each cyclone. The cyclones examined and tabulated under this grant are:

Month/Year	First Cyclone	Last Cyclone	Number of Cyclones
Jun 86	5278	5352	75
Jul 86	5353	5414	62
Aug 86	5415	5489	75
Sep 86	5490	5576	87
Oct 86	5579	5662	84
Nov 86	5663	5758	96
Dec 86	5760	5855	96

Jan 87	5860	5986	127
Feb 87	5987	6081	95
Mar 87	6083	6186	104
Apr 87	6187	6269	83
May 87	6270	6342	73
12 months	5278	6342	1,057 cyclones

This table indicates that a total of 1,057 cyclones were examined and tabulated for updating the cyclone tape for a 12-month period through May 1987.

For the purpose of quick evaluation of the 12-month cyclone data, deepening and filling of cyclones were plotted into two-color maps by computer. Figure 1 shows where cyclone deepenings occurred during the one-year period ending May 1987. Asterisks denotes the deepening rates in excess of 1 mb/hour. The worst deepening areas were located off the east coast of the United States and in the western Pacific east of Japan. Cyclone fillings (Fig. 2), on the other hand, occurred where cyclones approached land areas with high mountains. Gulf of Alaska and the Atlantic off the southeast coast of Greenland are these locations.

As of July, 1991 the "cyclone tape" being updated by Fujita under the ONR Grant covers the six-year period ending May 1987.

Chicago Univ., Il
Dept. of Geophysical Sciences
Wind Research Lab

per telecon ONR 7/25/91 cl

No. 5278 First Cyclone of June 86

CYCLONE 5278

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5278	86	6	1	12	60.1	241.6	*	*	1002.6	*	7.8	*	59	120W	1004	4.0	0	8.5	0
5278	86	6	1	18	60.9	242.7	210	5	1000.9	-1.7	8.3	0.5	60	119W	1002	4.5	0	8.0	0
5278	86	6	2	0	61.7	244.4	220	6	998.6	-2.3	8.9	0.6	61	116W	998	4.0	0	7.5	0
5278	86	6	2	6	62.7	246.9	230	8	996.4	-2.2	9.9	1.0	64	115W	996	4.0	3	7.5	0
5278	86	6	2	12	63.0	250.7	260	9	994.6	-1.8	10.8	0.9	64	111W	994	5.0	3	9.5	1
5278	86	6	2	18	62.9	255.3	270	11	993.6	-1.0	11.7	0.9	64	107W	994	4.0	3	7.0	2
5278	86	6	3	0	62.4	260.6	280	13	992.4	-1.2	12.3	0.6	62	98W	992	4.0	3	7.0	1
5278	86	6	3	6	61.9	265.5	280	12	991.8	-0.6	12.8	0.5	62	94W	992	4.0	3	7.0	1
5278	86	6	3	12	61.6	270.1	280	11	991.2	-0.6	13.2	0.4	61	89W	990	3.5	4	7.0	2
5278	86	6	3	18	61.7	273.9	270	9	990.8	-0.4	13.7	0.5	61	85W	992	3.5	4	6.5	0
5278	86	6	4	0	62.1	276.9	250	8	989.6	-1.2	14.5	0.8	61	82W	992	4.5	4	7.0	0
5278	86	6	4	6	63.1	279.0	230	7	986.6	-3.0	15.6	1.1	63	79W	984	3.5	4	7.0	3
5278	86	6	4	12	63.9	280.4	210	6	985.4	-1.2	17.1	1.5	64	79W	986	3.5	4	5.5	3
5278	86	6	4	18	64.7	281.2	200	4	984.2	-1.2	18.3	1.2	66	79W	982	2.5	4	4.0	3
5278	86	6	5	0	65.0	281.5	200	2	985.2	1.0	18.8	0.5	65	76W	986	4.5	4	6.5	3
5278	86	6	5	6	65.2	281.5	170	1	985.8	0.6	18.5	-0.3	65	79W	986	4.0	3	6.0	3
5278	86	6	5	12	65.3	281.8	240	1	987.0	1.2	17.5	-1.0	66	80W	986	3.5	3	5.5	3
5278	86	6	5	18	65.2	282.7	280	2	988.6	1.6	16.1	-1.4	65	79W	988	4.5	3	6.5	3
5278	86	6	6	0	65.3	284.1	260	3	990.8	2.2	14.5	-1.6	65	75W	992	6.0	3	9.0	3
5278	86	6	6	6	65.4	285.3	250	3	992.4	1.6	13.2	-1.3	65	74W	992	5.5	3	9.0	2
5278	86	6	6	12	65.7	286.1	240	2	994.2	1.8	12.5	-0.7	66	73W	994	5.5	3	9.0	2
5278	86	6	6	18	65.8	286.5	230	1	995.6	1.4	12.2	-0.3	66	74W	996	5.0	3	8.5	3
5278	86	6	7	0	65.9	286.9	240	1	996.9	1.3	12.2	0.0	66	72W	998	5.5	3	8.5	1

No. 5352 Last Cyclone of June 86

CYCLONE 5352

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	wI	LA*	LO*	PC*	A.	A*	B.	B*
5352	86	6	30	18	59.1	56.0	*	*	994.6	*	10.2	*	60	52E	998	10	0	3	15.5	1
5352	86	7	1	0	59.0	57.5	280	4	991.6	-3.0	10.8	0.6	58	59E	990	7.5	5	12.5	3
5352	86	7	1	6	59.2	58.3	240	2	989.4	-2.2	11.6	0.8	59	58E	990	7.5	5	12.5	3
5352	86	7	1	12	59.8	59.3	220	4	985.8	-3.6	13.0	1.4	59	60E	988	6.0	5	12.0	3
5352	86	7	1	18	60.7	59.9	200	5	981.6	-4.2	14.7	1.7	60	60E	980	4.0	5	8.0	5
5352	86	7	2	0	61.7	60.6	200	6	976.8	-2.8	16.5	1.8	62	60E	976	4.0	5	6.0	5
5352	86	7	2	6	62.7	61.3	200	5	978.4	-0.4	17.3	0.8	63	62E	978	4.5	5	7.5	4
5352	86	7	2	12	63.4	62.0	200	4	979.4	1.0	16.9	-0.4	64	61E	980	5.5	5	8.0	4
5352	86	7	2	18	64.0	62.6	210	3	980.6	1.2	15.8	-1.1	64	64E	980	4.5	5	8.0	4
5352	86	7	3	0	64.4	63.1	200	2	982.0	1.4	14.8	-1.0	64	63E	982	5.5	4	9.5	4
5352	86	7	3	6	64.7	63.5	220	2	983.4	1.4	14.2	-0.6	66	62E	984	5.0	4	8.0	4
5352	86	7	3	12	64.6	64.0	290	1	984.4	1.0	13.7	-0.5	65	66E	984	5.0	4	8.5	3
5352	86	7	3	18	64.4	64.6	310	2	985.4	1.0	13.2	-0.5	64	64E	986	6.0	4	9.5	4
5352	86	7	4	0	64.2	65.6	290	3	985.8	0.4	12.7	-0.5	64	63E	986	5.0	4	9.0	4
5352	86	7	4	6	64.1	67.2	280	4	985.4	-0.4	12.6	-0.1	64	67E	986	6.0	4	11.0	3
5352	86	7	4	12	64.0	68.9	270	4	984.8	-0.6	12.7	0.1	64	70E	986	6.5	4	10.5	3
5352	86	7	4	18	64.1	70.3	270	3	983.6	-1.2	12.9	0.2	64	71E	980	4.0	5	7.0	4
5352	86	7	5	0	64.2	71.1	250	2	985.0	1.4	12.7	-0.2	64	72E	986	6.0	5	10.5	3
5352	86	7	5	6	64.4	71.5	220	2	986.2	1.2	12.1	-0.6	64	72E	986	6.0	5	10.5	3
5352	86	7	5	12	64.7	71.8	200	2	988.0	1.8	11.3	-0.8	65	71E	988	6.0	4	10.0	3
5352	86	7	5	18	65.0	72.1	200	2	989.2	1.2	10.5	-0.8	65	73E	990	5.5	5	12.5	3
5352	86	7	6	0	65.3	72.2	190	2	990.0	0.8	9.7	-0.8	65	72E	990	6.5	4	10.5	1
5352	86	7	6	6	65.7	72.4	200	2	991.2	1.2	8.8	-0.9	66	72E	990	4.5	4	11.5	1
5352	86	7	6	12	66.0	72.7	200	2	992.8	1.6	8.1	-0.7	66	72E	992	6.5	4	12.5	0
5352	86	7	6	18	66.3	72.8	190	2	994.8	2.0	7.7	-0.4	66	75E	998	10.5	3	22.0	0
5352	86	7	7	0	66.6	72.6	160	1	994.7	-0.1	8.0	0.3	67	72E	994	10.5	3	11.5	1
5352	86	7	7	6	66.7	72.5	160	1	994.6	-0.1	8.3	0.3	67	72E	994	6.5	3	11.5	1

No. 5353 First Cyclone of July 86

CYCLONE 5353

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5353	86	7	1	18	46.6	187.8	*	*	992.0	*	14.9	*	45	173W	996	3.5	3	8.0	3
5353	86	7	2	0	47.5	188.3	200	5	989.3	-2.7	15.5	0.6	47	173W	986	3.5	3	6.0	3
5353	86	7	2	6	48.2	188.7	200	4	989.2	-0.1	15.9	0.4	48	170W	988	3.5	4	6.5	4
5353	86	7	2	12	48.9	188.8	190	4	989.2	0.0	16.4	0.5	50	170W	992	4.0	4	7.5	4
5353	86	7	2	18	49.4	188.9	180	2	988.4	-0.8	16.7	0.3	50	172W	988	4.0	5	7.5	4
5353	86	7	3	0	49.6	189.0	200	1	988.0	-0.4	16.9	0.2	49	172W	986	4.0	5	7.5	4
5353	86	7	3	6	50.0	189.4	210	2	988.6	0.6	17.0	0.1	50	170W	988	5.0	5	8.0	4
5353	86	7	3	12	50.4	189.7	200	3	990.0	1.4	16.6	-0.4	50	170W	992	6.0	5	10.0	5
5353	86	7	3	18	51.0	189.9	190	3	990.4	0.4	16.1	-0.5	51	170W	990	4.5	5	8.5	5
5353	86	7	4	0	51.5	189.8	180	3	990.8	0.4	15.3	-0.8	52	170W	990	4.0	5	8.0	5
5353	86	7	4	6	51.9	189.6	160	2	991.8	1.0	14.3	-1.0	52	170W	992	4.5	5	8.5	5
5353	86	7	4	12	52.1	189.2	130	2	993.4	1.6	13.0	-1.3	52	170W	992	3.5	5	9.5	5
5353	86	7	4	18	52.3	188.7	120	2	996.0	2.6	11.5	-1.5	53	172W	996	5.0	5	11.0	5
5353	86	7	5	0	52.3	188.5	110	1	998.4	2.4	10.1	-1.4	52	173W	1000	7.5	5	18.0	1
5353	86	7	5	6	52.4	188.6	210	0	999.6	1.2	9.3	-0.8	52	170W	1000	7.0	4	17.0	0
5353	86	7	5	12	52.5	188.5	150	1	1000.0	0.4	8.8	-0.5	53	172W	1000	6.5	4	16.5	0

No. 5414 Last Cyclone of July 86

CYCLONE 5414

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5414	86	7	31	18	80.3	198.6	*	*	996.6	*	9.4	*	81	160W	996	6.5	3	11.5	3
5414	86	8	1	0	79.8	198.3	10	2	996.9	0.3	9.3	-0.1	80	160W	996	6.0	3	9.5	3
5414	86	8	1	6	79.3	198.1	360	2	997.4	0.5	9.3	0.0	80	167W	1000	7.5	3	12.0	0
5414	86	8	1	12	78.7	198.9	350	3	996.2	-1.2	9.4	0.1	78	160W	996	5.0	3	11.0	2
5414	86	8	1	18	78.4	199.6	340	2	995.0	-1.2	9.7	0.3	78	160W	994	6.0	5	10.0	2
5414	86	8	2	0	78.1	200.8	310	2	994.0	-1.0	9.9	0.2	78	160W	994	6.0	4	10.5	1
5414	86	8	2	6	78.0	202.5	290	2	993.8	-0.2	10.0	0.1	78	160W	994	5.0	4	10.0	0
5414	86	8	2	12	78.1	205.8	260	4	993.8	0.0	9.7	-0.3	78	155W	992	4.0	4	7.5	1
5414	86	8	2	18	78.4	210.7	250	5	995.2	1.4	9.0	-0.7	77	155W	996	6.0	3	8.5	0
5414	86	8	3	0	79.0	217.9	240	8	996.2	1.0	8.0	-1.0	79	143W	996	6.5	3	13.0	0
5414	86	8	3	6	79.6	226.1	250	8	996.6	0.4	7.6	-0.4	80	132W	998	8.0	3	15.0	0
5414	86	8	3	12	80.0	234.1	250	8	995.4	-1.2	8.1	0.5	80	125W	998	9.0	3	16.0	0
5414	86	8	3	18	80.3	241.9	250	7	992.4	-3.0	9.4	1.3	80	115W	990	5.0	3	8.5	2
5414	86	8	4	0	80.5	249.6	260	7	991.0	-1.4	10.9	1.5	81	115W	990	5.0	4	8.5	3
5414	86	8	4	6	80.5	258.3	270	7	991.0	0.0	12.1	1.2	81	104W	990	4.5	4	7.5	3
5414	86	8	4	12	80.0	266.6	280	8	992.4	1.4	12.6	0.5	80	90W	992	4.5	5	8.5	3
5414	86	8	4	18	79.3	273.6	290	7	993.8	1.4	13.0	0.4	80	82W	996	5.5	3	9.0	3
5414	86	8	5	0	78.5	279.0	310	7	993.8	0.0	13.1	0.1	78	85W	994	5.0	4	7.5	3
5414	86	8	5	6	77.7	284.0	310	7	993.6	-0.2	12.9	-0.2	78	72W	992	3.5	4	6.5	3
5414	86	8	5	12	77.0	287.6	310	6	994.0	0.4	12.3	-0.6	76	71W	994	4.0	4	8.0	3
5414	86	8	5	18	76.5	290.5	300	4	994.6	0.6	11.4	-0.9	76	70W	996	6.0	4	9.0	2
5414	86	8	6	0	76.1	292.4	310	3	994.4	-0.2	10.7	-0.7	77	65W	994	3.5	4	9.0	2
5414	86	8	6	6	75.8	293.0	340	2	994.4	0.0	10.4	-0.3	75	64W	994	4.5	3	10.0	2
5414	86	8	6	12	75.6	292.8	20	1	994.4	0.0	10.5	0.1	75	66W	994	5.5	3	9.0	2
5414	86	8	6	18	75.6	292.1	80	1	995.1	0.7	10.8	0.3	76	71W	996	5.0	3	8.0	2

No. 5415 First Cyclone of August 86

CYCLONE 5415

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5415	86	8	1	6	56.9	186.3	*	*	999.7	*	10.2	*	56	177W	1002	7.0	3	15.0	1
5415	86	8	1	12	57.3	187.5	240	4	997.1	-2.6	11.7	1.5	57	172W	998	5.5	3	10.0	2
5415	86	8	1	18	57.7	188.4	230	3	993.6	-3.5	13.7	2.0	58	171W	994	4.5	4	7.5	3
5415	86	8	2	0	58.2	189.3	220	3	989.4	-4.2	16.0	2.3	58	171W	990	3.5	4	6.0	4
5415	86	8	2	6	58.6	189.6	210	2	985.6	-3.8	17.4	1.4	59	169W	982	2.5	5	4.5	4
5415	86	8	2	12	58.8	189.5	170	1	984.4	-1.2	17.9	0.5	59	169W	984	3.0	5	6.0	4
5415	86	8	2	18	59.0	189.1	120	2	983.6	-0.8	18.0	0.1	59	172W	986	4.5	4	7.0	4
5415	86	8	3	0	59.1	188.7	130	1	982.2	-1.4	18.0	0.0	59	171W	982	3.5	5	6.5	5
5415	86	8	3	6	59.4	188.4	140	1	980.6	-1.6	18.0	0.0	59	172W	978	2.5	5	5.0	5
5415	86	8	3	12	59.7	188.3	170	1	981.0	0.4	17.7	-0.3	60	172W	982	3.5	5	6.5	5
5415	86	8	3	18	59.9	188.4	190	1	981.6	0.6	17.3	-0.4	60	172W	980	2.5	5	5.0	5
5415	86	8	4	0	60.2	188.6	200	2	983.6	2.0	16.8	-0.5	60	172W	984	2.5	5	6.0	5
5415	86	8	4	6	60.7	188.9	200	3	985.6	2.0	16.1	0.7	60	170W	986	3.5	5	7.0	5
5415	86	8	4	12	61.3	189.1	190	3	987.8	2.2	15.3	-0.8	61	171W	986	2.5	5	5.0	5
5415	86	8	4	18	62.0	189.2	190	3	990.8	3.0	14.2	-1.1	63	171W	992	4.0	5	9.0	3
5415	86	8	5	0	62.5	189.5	190	3	993.0	2.2	13.3	-0.9	62	171W	994	5.0	5	9.0	3
5415	86	8	5	6	63.1	189.8	200	3	994.6	1.6	12.3	-1.0	63	170W	994	4.5	5	9.0	3
5415	86	8	5	12	63.7	190.2	190	3	996.0	1.4	11.3	-1.0	64	170W	996	4.0	4	8.5	2
5415	86	8	5	18	64.4	190.5	190	3	997.4	1.4	10.0	-1.3	64	169W	998	5.0	3	9.5	1
5415	86	8	6	0	65.1	190.4	180	4	998.4	1.0	8.7	-1.3	65	169W	998	5.0	3	9.5	1
5415	86	8	6	6	65.8	190.2	170	4	999.6	1.2	7.4	-1.3	66	169W	1000	5.5	1	12.5	1
5415	86	8	6	12	66.3	189.8	160	3	1000.2	0.6	6.5	-0.9	67	171W	1000	5.0	1	12.0	1
5415	86	8	6	18	66.5	189.6	160	1	1001.1	0.9	6.0	-0.5	67	171W	1002	6.0	1	19.0	0

No. 5489 Last Cyclone of August 86

CYCLONE 5489

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A	A*	B	B*
5489	86	8	31	18	75.6	288.3	*	*	998.6	*	7.2	*	76	73W	998	4.5	1	9.0	0
5489	86	9	1	0	75.6	288.5	320	0	998.7	0.1	7.1	-0.1	76	70W	1000	7.0	2	11.0	0
5489	86	9	1	6	75.6	288.1	120	1	998.0	-0.7	6.9	-0.2	74	72W	998	5.0	0	10.0	0
5489	86	9	1	12	76.0	287.4	160	2	997.2	-0.8	6.9	0.0	76	70W	996	8.0	3	14.0	0
5489	86	9	1	18	76.3	285.8	130	2	996.8	-0.4	7.3	0.4	77	76W	998	8.0	3	16.0	0
5489	86	9	2	0	76.4	284.7	120	1	995.6	-1.2	8.0	0.7	77	73W	996	6.5	3	11.0	1
5489	86	9	2	6	76.3	283.6	80	1	994.2	-1.4	8.6	0.6	76	81W	994	6.0	3	9.5	1
5489	86	9	2	12	76.2	283.6	360	1	993.4	-0.8	8.8	0.2	76	75W	992	5.5	3	10.0	2
5489	86	9	2	18	76.1	283.2	40	1	994.0	0.6	8.6	-0.2	77	78W	992	5.0	3	10.0	2
5489	86	9	3	0	75.9	282.7	20	1	996.4	2.4	8.2	-0.4	75	73W	998	6.5	3	13.5	1
5489	86	9	3	6	75.7	281.5	60	2	998.4	2.0	7.7	-0.5	76	81W	998	5.5	4	11.5	1
5489	86	9	3	12	75.3	280.8	20	2	1001.0	2.6	6.9	-0.8	76	80W	1000	4.5	4	12.0	1
5489	86	9	3	18	74.9	280.3	20	2	1003.3	2.3	6.1	-0.8	75	80W	1004	8.5	1	19.0	0
5489	86	9	4	0	74.4	280.2	360	2	1005.7	2.4	5.5	-0.6	73	80W	1008	7.5	2	28.0	0

No. 5490 First Cyclone of September 86

CYCLONE NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5490	86	9	1	6	27.3	142.6	*	*	994.0	*	16.9	*	25	144E	994	9.0	5	13.5	1
5490	86	9	1	12	28.1	141.9	140	5	994.0	0.0	16.5	-0.4	27	142E	994	6.0	4	11.5	2
5490	86	9	1	18	29.1	141.2	150	6	993.8	-0.2	16.0	-0.5	29	142E	994	5.5	4	11.0	1
5490	86	9	2	0	30.4	140.2	150	8	993.8	0.0	15.5	-0.5	30	140E	994	5.0	5	9.0	2
5490	86	9	2	6	31.8	139.3	150	8	993.8	0.0	14.7	-0.8	32	139E	992	4.0	4	9.0	2
5490	86	9	2	12	33.3	138.8	160	8	995.2	1.4	13.9	-0.8	33	138E	996	5.5	4	13.0	1
5490	86	9	2	18	34.7	138.7	180	8	996.4	1.2	13.4	-0.5	35	138E	996	6.0	5	13.0	1
5490	86	9	3	0	36.1	139.2	200	7	997.8	1.4	13.1	-0.3	36	138E	998	6.0	5	14.0	1
5490	86	9	3	6	37.5	140.3	210	9	998.6	0.8	12.9	-0.2	38	140E	1000	5.5	5	11.5	3
5490	86	9	3	12	38.9	141.7	220	9	998.4	-0.2	12.7	-0.2	38	141E	998	4.5	4	12.0	1
5490	86	9	3	18	40.2	143.7	230	11	998.2	-0.2	12.5	-0.2	41	143E	998	4.5	4	9.5	1
5490	86	9	4	0	41.1	146.2	240	11	997.6	-0.6	12.7	0.2	42	145E	998	4.0	3	9.5	0
5490	86	9	4	6	41.6	149.1	260	11	996.4	-1.2	13.6	0.9	43	149E	998	4.0	3	8.5	0
5490	86	9	4	12	41.7	151.7	270	10	994.4	-2.0	14.8	1.2	41	152E	994	2.5	4	5.5	1
5490	86	9	4	18	41.7	154.0	270	9	992.8	-1.6	15.7	0.9	42	157E	990	3.0	4	5.5	4
5490	86	9	5	0	41.5	155.6	280	6	993.4	0.6	15.6	-0.1	42	155E	994	4.0	4	7.5	3
5490	86	9	5	6	41.2	157.5	280	8	994.2	0.8	14.9	-0.7	42	156E	994	4.0	4	8.0	3
5490	86	9	5	12	40.7	159.9	290	9	995.6	1.4	13.9	-1.0	40	159E	996	5.0	3	10.0	3
5490	86	9	5	18	40.3	162.7	280	11	996.6	1.0	12.8	-1.1	40	163E	996	3.5	4	9.0	3
5490	86	9	6	0	40.2	165.6	270	11	998.0	1.4	11.3	-1.0	40	165E	998	4.0	4	9.0	2
5490	86	9	6	6	40.2	168.6	270	12	999.4	1.4	10.6	-1.2	40	169E	1000	6.5	3	17.0	0
5490	86	9	6	12	40.3	171.4	270	11	1000.6	1.2	9.7	-0.9	40	171E	1000	4.5	4	13.5	0
5490	86	9	6	18	40.3	173.6	270	8	1001.8	1.2	8.9	-0.8	41	175E	1002	9.0	3	21.0	0
5490	86	9	7	0	40.3	175.1	270	6	1002.9	1.1	8.6	-0.3	40	179E	1004	7.0	3	23.0	0

No. 5576 Last Cyclone of September 86

CYCLONE NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5576	86	9	30	18	39.9	194.0	*	*	999.4	*	13.2	*	39	166W	1000	5.0	4	9.0	0
5576	86	10	1	0	40.7	194.4	200	4	999.1	-0.3	13.0	-0.2	39	167W	998	4.0	4	10.0	1
5576	86	10	1	6	41.6	194.9	200	5	999.6	0.5	12.8	-0.2	42	165W	1000	4.0	4	10.0	1
5576	86	10	1	12	42.6	195.3	200	5	1000.0	0.4	12.4	-0.4	43	164W	1000	3.0	4	9.0	0
5576	86	10	1	18	43.6	195.5	190	5	1000.0	0.0	12.0	-0.4	44	164W	1000	3.5	4	8.5	0
5576	86	10	2	0	44.7	196.0	200	6	1000.0	0.0	11.6	-0.4	44	164W	1002	6.5	3	12.0	0
5576	86	10	2	6	46.3	197.0	200	9	998.0	-2.0	11.6	0.0	44	167W	996	3.5	3	8.0	0
5576	86	10	2	12	48.5	199.0	210	13	996.0	-2.0	12.1	0.5	49	160W	1000	4.5	3	10.0	0
5576	86	10	2	18	50.8	201.3	210	14	990.8	-5.2	13.6	1.5	51	160W	992	3.5	3	8.5	1
5576	86	10	3	0	53.3	204.1	210	15	985.8	-5.0	15.5	1.9	53	156W	982	3.0	5	5.0	4
5576	86	10	3	6	55.7	206.6	210	15	984.8	-1.0	16.8	1.3	55	153W	980	2.0	5	4.0	4
5576	86	10	3	12	58.3	208.6	200	14	987.6	2.8	16.9	0.1	59	149W	986	4.5	5	8.0	5
5576	86	10	3	18	60.7	209.5	190	12	992.6	5.0	15.9	-1.0	61	149W	1000	4.0	5	7.0	3
5576	86	10	4	0	62.9	209.7	180	12	992.8	0.2	14.5	-1.4	63	150W	990	4.0	4	6.5	3
5576	86	10	4	6	65.0	210.1	180	11	994.2	1.4	12.7	-1.8	65	149W	994	4.0	4	8.0	2
5576	86	10	4	12	67.0	211.5	200	11	994.4	0.2	11.2	-1.5	67	155W	994	4.0	4	8.0	2
5576	86	10	4	18	68.7	215.4	220	11	995.8	1.4	9.9	-1.3	70	148W	998	5.5	3	11.5	0
5576	86	10	5	0	69.8	220.4	230	11	995.4	-0.4	9.1	-0.8	71	140W	994	4.0	3	8.0	0
5576	86	10	5	6	70.4	224.4	250	8	995.8	0.4	8.6	-0.5	70	132W	996	6.0	3	12.5	0
5576	86	10	5	12	70.8	227.2	240	5	995.7	-0.1	8.5	-0.1	72	126W	996	5.0	3	11.0	1

No. 5579 First Cyclone of October 86

CYCLONE 5579

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5579	86	10	1	18	34.6	37.1	*	*	1001.1	*	13.8	*	34	39E	1002	9.5	3	14.5	0
5579	86	10	2	0	34.8	36.4	110	3	1001.1	0.0	13.8	0.0	35	36E	1000	6.0	3	10.0	2
5579	86	10	2	6	34.8	35.9	100	2	1002.0	0.9	13.2	-0.6	35	36E	1000	6.5	3	10.5	2
5579	86	10	2	12	34.8	35.2	90	3	1004.4	2.4	12.1	-1.1	35	35E	1006	7.5	3	12.0	0
5579	86	10	2	18	34.8	34.4	90	3	1006.2	1.8	10.6	-1.5	35	35E	1006	5.5	3	12.0	1
5579	86	10	3	0	34.9	33.5	100	4	1008.0	1.8	9.1	-1.5	34	34E	1008	9.0	3	17.0	0
5579	86	10	3	6	35.0	32.8	110	3	1009.1	1.1	8.1	-1.0	35	32E	1010	9.5	3	25.0	0
5579	86	10	3	12	35.2	32.3	120	2	1009.7	0.6	7.3	-0.8	36	31E	1010	8.0	1	30.0	0

No. 5662 Last Cyclone of October 86

CYCLONE 5662

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5662	86	10	30	18	46.3	259.2	*	*	1003.7	*	14.3	*	44	105W	1006	8.0	3	12.0	1
5662	86	10	31	0	47.8	261.6	230	12	1001.1	-2.6	15.1	0.8	46	100W	1002	5.0	2	8.0	1
5662	86	10	31	6	49.8	264.8	230	15	998.0	-3.1	16.3	1.2	49	97W	998	4.5	5	7.5	1
5662	86	10	31	12	52.4	269.6	230	21	994.0	-4.0	17.5	1.2	52	94W	994	3.0	4	5.0	3
5662	86	10	31	18	55.2	275.5	230	23	990.2	-3.8	18.2	0.7	55	84W	990	3.0	4	5.0	3
5662	86	11	1	0	57.8	281.5	230	22	986.8	-3.4	18.2	0.0	59	79W	986	3.5	5	6.0	3
5662	86	11	1	6	59.9	287.3	230	19	984.0	-2.8	17.8	-0.4	61	70W	984	4.0	5	6.5	3
5662	86	11	1	12	61.3	292.2	240	15	981.8	-2.2	17.2	-0.6	62	67W	982	4.0	5	7.0	4
5662	86	11	1	18	62.4	296.9	240	13	980.4	-1.4	16.4	-0.8	63	64W	978	2.5	5	5.0	4
5662	86	11	2	0	63.4	301.1	240	11	981.0	0.6	15.2	-1.2	63	59W	980	3.0	4	5.5	3
5662	86	11	2	6	64.5	304.5	230	10	982.4	1.4	14.0	-1.2	64	51W	984	3.5	3	7.0	2
5662	86	11	2	12	66.0	305.9	200	9	983.2	0.8	13.1	-0.9	65	52W	984	4.5	3	7.5	1
5662	86	11	2	18	68.2	305.5	180	11	983.6	0.4	12.6	-0.5	69	52W	982	3.0	3	5.5	1
5662	86	11	3	0	71.2	302.5	160	16	985.2	1.6	12.3	-0.3	70	55W	984	3.0	4	7.0	2
5662	86	11	3	6	73.0	299.6	150	10	988.0	2.8	12.0	-0.3	74	59W	988	4.0	3	7.0	3
5662	86	11	3	12	74.0	297.1	150	7	990.7	2.7	11.7	-0.3	75	64W	992	3.5	3	7.0	3
5662	86	11	3	18	74.7	294.8	140	5	992.6	1.9	11.3	-0.4	76	72W	994	4.0	3	8.0	1

No. 5663 First Cyclone of November 86

CYCLONE 5663

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5663	86	11	1	12	71.6	24.6	*	*	986.9	*	11.7	*	71	22E	986	5.5	3	9.5	1
5663	86	11	1	18	72.2	26.4	230	4	987.6	0.7	12.7	1.0	72	26E	988	4.0	3	7.5	3
5663	86	11	2	0	73.0	28.9	220	6	987.6	0.0	14.1	1.4	72	28E	988	5.0	4	8.5	3
5663	86	11	2	6	73.9	30.7	210	5	987.4	-0.2	16.1	2.0	73	30E	988	4.0	4	6.0	3
5663	86	11	2	12	74.9	32.5	210	6	986.8	-0.6	17.4	1.3	76	35E	986	3.5	5	5.5	3
5663	86	11	2	18	75.6	33.8	200	4	986.6	-0.2	17.9	0.5	76	33E	986	4.0	4	5.5	4
5663	86	11	3	0	76.1	35.2	220	3	987.0	0.4	17.1	-0.8	76	38E	988	3.0	4	6.0	4
5663	86	11	3	6	76.2	36.2	250	1	987.4	0.4	16.3	-0.8	77	32E	986	2.5	4	4.5	4
5663	86	11	3	12	75.8	38.0	310	3	988.8	1.4	15.1	-1.2	77	38E	988	3.0	4	5.5	4
5663	86	11	3	18	75.2	39.3	330	4	990.6	1.8	13.9	-1.2	75	42E	992	4.5	5	8.0	3
5663	86	11	4	0	74.7	40.1	340	3	991.8	1.2	12.9	-1.0	74	40E	992	5.0	4	9.0	3
5663	86	11	4	6	74.2	40.4	350	2	992.6	0.8	12.0	-0.9	74	41E	992	6.0	3	9.0	2
5663	86	11	4	12	73.7	40.5	360	2	993.6	1.0	11.1	-0.9	74	40E	994	6.0	3	9.0	1
5663	86	11	4	18	73.2	41.0	340	3	994.4	0.8	10.2	-0.9	74	41E	994	6.5	2	9.5	0
5663	86	11	5	0	72.7	41.7	340	3	995.6	1.2	9.2	-1.0	72	40E	996	8.0	2	11.5	0
5663	86	11	5	6	72.3	42.5	330	2	996.2	0.6	8.5	-0.7	72	43E	996	6.0	2	10.0	0
5663	86	11	5	12	72.0	42.8	340	2	997.0	0.8	7.9	-0.6	72	46E	998	5.0	1	9.5	0
5663	86	11	5	18	71.7	42.8	360	2	997.0	0.0	7.7	-0.2	72	42E	996	4.5	3	10.0	0
5663	86	11	6	0	71.3	42.8	360	2	997.6	0.6	7.4	-0.3	71	40E	998	6.0	1	11	0 0
5663	86	11	6	6	70.9	43.2	340	2	998.0	0.4	7.2	-0.2	71	46E	998	5.0	1	9.0	0
5663	86	11	6	12	70.6	43.2	360	2	998.4	0.4	6.9	-0.3	71	42E	998	6.0	1	10.0	1
5663	86	11	6	18	70.2	43.5	350	2	999.1	0.7	6.5	-0.4	69	44E	1000	5.0	0	12.0	0

No. 5758 Last Cyclone of November 86

CYCLONE NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5758	86	11	30	0	40.3	304.3	*	*	1006.0	*	9.1	*	38	60W	1008	6.0	2	20.0	0
5758	86	11	30	6	41.7	306.8	230	12	1002.2	-3.8	10.7	1.6	41	56W	1006	8.5	2	16.5	0
5758	86	11	30	12	43.3	309.7	230	14	996.2	-6.0	13.4	2.7	42	50W	998	3.5	3	7.5	2
5758	86	11	30	18	45.6	313.1	230	17	988.2	-8.0	17.3	3.9	45	47W	984	2.5	5	3.5	3
5758	86	12	1	0	47.9	316.3	220	16	982.2	-6.0	20.5	3.2	49	43W	982	2.5	5	4.5	3
5758	86	12	1	6	49.9	319.0	220	14	977.2	-5.0	23.2	2.7	50	40W	980	3.0	5	5.0	3
5758	86	12	1	12	51.6	321.2	220	11	971.0	-6.2	25.4	2.2	52	38W	968	2.0	5	4.0	5
5758	86	12	1	18	52.9	323.0	220	9	966.4	-4.6	27.4	2.0	54	36W	968	2.5	5	4.5	5
5758	86	12	2	0	53.9	324.7	220	7	961.4	-5.0	29.0	1.6	54	36W	960	2.5	5	4.0	5
5758	86	12	2	6	54.9	326.7	230	8	958.6	-2.8	29.5	0.5	55	34W	956	2.5	5	4.0	5
5758	86	12	2	12	56.0	329.3	230	9	958.0	-0.6	29.1	-0.4	55	33W	958	2.0	5	4.5	5
5758	86	12	2	18	57.4	332.6	230	12	958.2	0.2	28.6	-0.5	57	27W	958	2.0	5	3.5	4
5758	86	12	3	0	58.9	336.0	230	12	959.6	1.4	27.6	-1.0	59	24W	960	2.5	5	4.0	5
5758	86	12	3	6	60.4	339.6	230	12	961.0	1.4	25.9	-1.7	61	21W	958	2.5	5	5.0	5
5758	86	12	3	12	61.5	343.2	240	11	965.2	4.2	23.5	-2.4	62	17W	966	3.0	5	5.0	3
5758	86	12	3	18	62.1	346.5	250	9	969.2	4.0	20.7	-2.8	63	12W	968	2.5	4	4.0	3
5758	86	12	4	0	62.5	349.5	260	7	974.8	5.6	17.8	-2.9	63	9W	976	3.0	3	6.0	3
5758	86	12	4	6	62.6	352.2	260	6	979.2	4.4	15.2	-2.6	62	10W	97?	3.0	3	5.5	3
5758	86	12	4	12	62.8	355.0	260	7	984.2	5.0	13.0	-2.2	63	5W	986	5.0	3	7.5	3
5758	86	12	4	18	62.9	357.4	260	6	987.2	3.0	11.4	-1.6	63	0W	988	3.5	3	8.0	0
5758	86	12	5	0	62.9	359.3	260	5	989.2	2.0	10.6	-0.8	63	0W	990	3.0	3	8.0	0
5758	86	12	5	6	62.9	1.5	270	5	989.0	-0.2	10.7	0.1	63	1W	990	4.0	3	10.5	1
5758	86	12	5	12	62.8	5.0	270	8	986.8	-2.2	12.2	1.5	63	3E	990	5.0	3	11.0	3
5758	86	12	5	18	62.6	9.7	270	11	981.6	-5.2	15.2	3.0	63	6E	982	4.0	5	7.0	3
5758	86	12	6	0	62.2	15.5	280	14	976.4	-5.2	19.3	4.1	62	16E	974	4.0	5	5.5	4
5758	86	12	6	6	61.7	21.3	280	14	973.6	-2.8	22.2	2.9	62	23E	970	3.0	5	5.0	4
5758	86	12	6	12	61.1	26.6	280	13	975.2	1.6	22.9	0.7	61	27E	974	4.5	5	6.5	5
5758	86	12	6	18	60.5	31.5	280	13	979.0	3.8	21.4	-1.5	61	32E	978	4.0	5	6.0	5
5758	86	12	7	0	59.4	36.3	290	13	984.4	5.4	19.3	-2.1	60	36E	986	5.0	5	8.0	5
5758	86	12	7	6	58.1	41.1	300	14	988.4	4.0	17.8	-1.5	59	41E	988	4.0	4	7.0	4
5758	86	12	7	12	56.7	46.4	290	16	992.4	4.0	17.2	-0.6	56	46E	994	5.5	5	9.0	5
5758	86	12	7	18	55.6	52.5	290	18	994.6	2.2	17.1	-0.1	55	49E	994	5.0	5	8.0	4
5758	86	12	8	0	55.0	59.4	280	21	996.8	2.2	17.0	-0.1	54	59E	998	4.5	5	8.0	3
5758	86	12	8	6	54.9	66.4	270	21	997.8	1.0	16.8	-0.2	54	68E	998	4.0	5	6.5	3
5758	86	12	8	12	55.2	72.9	260	19	998.8	1.0	16.0	-0.8	55	74E	998	4.0	5	6.5	1
5758	86	12	8	18	55.9	78.9	260	18	1000.0	1.2	14.7	-1.3	55	79E	1000	4.0	3	6.5	1
5758	86	12	9	0	56.7	84.6	250	17	1001.2	1.2	12.9	-1.8	57	85E	1002	7.0	3	10.5	3
5758	86	12	9	6	57.4	90.2	250	16	1001.8	0.6	11.1	-1.8	58	91E	1002	6.0	3	9.5	0
5758	86	12	9	12	57.9	95.5	260	15	1001.8	0.0	9.6	-1.5	58	94E	1002	6.0	3	10.5	1
5758	86	12	9	18	58.3	100.4	260	14	1001.6	-0.2	8.4	-1.2	59	103E	1002	7.5	3	15.0	0
5758	86	12	10	0	58.4	103.5	260	8	1001.1	-0.5	7.9	-0.5	58	106E	1000	5.5	3	11.0	0
5758	86	12	10	6	58.6	105.5	260	6	1001.4	0.3	7.3	-0.6	59	110E	1002	6.5	0	12.5	0

No. 5760 First Cyclone of December 86

CYCLONE 5760

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5760	86	12	1	6	63.9	268.9	*	*	999.1	*	10.4	*	63	96W	1000	5.5	1	8.5	1
5760	86	12	1	12	64.3	272.5	250	8	998.0	-1.1	10.5	0.1	64	93W	998	4.5	1	7.5	1
5760	86	12	1	18	64.7	277.2	260	11	997.0	-1.0	10.6	0.1	65	84W	998	5.0	1	8.0	0
5760	86	12	2	0	65.2	283.3	260	13	995.2	-1.8	10.8	0.2	65	77W	994	4.0	3	7.5	1
5760	86	12	2	6	65.7	289.4	250	13	994.4	-0.8	11.0	0.2	65	70W	994	4.5	3	7.5	0
5760	86	12	2	12	66.4	294.8	250	12	994.4	0.0	10.9	-0.1	67	63W	994	4.5	3	8.0	1
5760	86	12	2	18	66.9	299.1	250	9	994.8	0.4	10.6	-0.3	67	60W	994	4.0	3	8.0	1
5760	86	12	3	0	67.4	301.8	250	6	995.8	1.0	10.4	-0.2	67	54W	998	5.5	1	8.5	1
5760	86	12	3	6	67.8	303.0	230	3	995.1	-0.7	10.2	-0.2	69	55W	994	3.5	2	7.0	1

No. 5855 Last Cyclone of December 86

CYCLONE NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5855	86	12	31	12	25.8	272.6	*	*	1005.4	*	12.5	*	25	90W	1006	6.0	3	16.0	0
5855	86	12	31	18	26.6	273.9	240	7	1004.7	-0.7	13.2	0.7	26	86W	1006	6.5	3	15.5	0
5855	87	1	1	0	27.6	275.3	230	8	1002.8	-1.9	14.5	1.3	26	86W	1002	5.5	5	12.0	0
5855	87	1	1	6	29.2	277.3	230	12	1000.8	-2.0	16.5	2.0	29	83W	1002	5.0	4	9.5	1
5855	87	1	1	12	31.1	279.4	220	14	997.6	-3.2	19.2	2.7	31	81W	998	3.5	4	6.5	3
5855	87	1	1	18	33.1	281.9	230	15	994.2	-3.4	22.0	2.8	33	78W	994	3.0	5	5.5	4
5855	87	1	2	0	35.2	284.3	220	15	990.4	-3.8	24.2	2.2	35	76W	990	2.5	5	4.0	4
5855	87	1	2	6	37.3	286.7	220	15	987.0	-3.4	25.2	1.0	37	73W	988	2.5	5	4.0	4
5855	87	1	2	12	39.4	288.7	220	13	983.8	-3.2	25.0	-0.2	40	70W	982	2.5	5	4.5	5
5855	87	1	2	18	41.1	290.1	210	10	982.8	-1.0	24.5	-0.5	42	69W	980	1.5	5	3.0	4
5855	87	1	3	0	42.4	291.0	210	7	984.4	1.6	24.1	-0.4	43	68W	984	2.0	5	4.0	5
5855	87	1	3	6	43.1	291.7	220	5	987.4	3.0	23.6	-0.5	44	69W	988	2.5	5	4.0	4
5855	87	1	3	12	43.4	292.8	250	4	990.6	3.2	22.3	-1.3	44	68W	990	3.0	5	5.0	4
5855	87	1	3	18	43.5	294.5	260	6	993.6	3.0	20.2	-2.1	43	67W	994	2.5	5	4.5	4
5855	87	1	4	0	43.7	296.8	260	9	995.6	2.0	17.6	-2.6	44	64W	998	4.5	3	7.5	3
5855	87	1	4	6	43.8	298.7	260	7	995.8	0.2	15.7	-1.9	43	61W	996	4.0	3	8.0	3
5855	87	1	4	12	44.1	300.3	260	6	995.1	-0.7	14.3	-1.4	45	55W	994	5.5	3	10.0	3

No. 5860 First Cyclone of January 87

CYCLONE 5860

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5860	87	1	2	6	42.8	222.1	*	*	996.6	*	18.7	*	40	140W	1002	4.5	3	7.0	2
5860	87	1	2	12	44.5	223.3	210	10	990.9	-5.7	19.0	0.3	42	138W	994	5.0	3	7.5	3
5860	87	1	2	18	46.4	224.6	200	11	984.0	-6.9	19.4	0.4	47	135W	980	3.0	4	6.0	3
5860	87	1	3	0	48.4	225.9	200	12	978.8	-5.2	20.4	1.0	49	134W	978	4.0	5	6.0	3
5860	87	1	3	6	50.1	227.1	200	9	976.0	-2.8	20.9	0.5	51	132W	974	3.5	4	5.5	4
5860	87	1	3	12	51.0	228.1	210	6	976.2	0.2	20.6	-0.3	52	132W	974	4.0	5	7.0	5
5860	87	1	3	18	51.4	229.2	240	4	979.8	3.6	19.0	-1.6	53	131W	980	3.5	5	6.0	3
5860	87	1	4	0	51.1	230.5	290	4	984.6	4.8	16.6	-2.4	51	131W	980	2.5	5	4.0	3
5860	87	1	4	6	50.5	231.9	300	5	993.0	8.4	13.4	-3.2	51	127W	996	5.5	3	9.0	0
5860	87	1	4	12	50.0	232.8	310	4	998.2	5.2	11.3	-2.1	50	126W	1000	4.5	3	9.5	1
5860	87	1	4	18	49.5	233.3	330	3	1002.9	4.7	9.7	-1.6	48	126W	1006	6.0	2	15.5	0

No. 5986 Last Cyclone of January 87

CYCLONE 5986

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A	A*	B	B*
5986	87	1	4	6	72.1	234.0	*	*	1000.0	*	7.1	*	71	128W	1002	6.5	0	14.0	0
5986	87	1	4	12	72.8	236.4	230	5	998.2	-1.8	8.2	1.1	73	126W	998	4.5	2	10.5	0
5986	87	1	4	18	73.5	240.9	240	8	996.8	-1.4	9.7	1.5	73	123W	996	5.0	4	9.5	1
5986	87	1	5	0	74.1	245.2	240	7	995.2	-1.6	11.7	2.0	74	116W	996	5.0	5	9.0	2
5986	87	1	5	6	74.6	250.0	250	7	993.4	-1.8	13.5	1.8	75	110W	994	4.0	4	7.0	2
5986	87	1	5	12	75.0	255.1	250	7	992.0	-1.4	14.5	1.0	75	104W	990	3.0	5	5.0	3
5986	87	1	5	18	75.3	259.9	250	7	992.4	0.4	14.3	-0.2	75	99W	990	3.0	5	6.0	5
5986	87	1	6	0	75.6	264.7	250	6	995.4	3.0	13.0	-1.3	76	96W	996	3.5	5	7.5	3
5986	87	1	6	6	75.7	270.1	260	7	998.6	3.2	11.2	-1.8	76	92W	998	4.0	5	7.5	2
5986	87	1	6	12	75.5	276.5	270	8	1001.6	3.0	9.6	-1.6	76	85W	1004	4.5	4	12.5	0
5986	87	1	6	18	75.1	282.9	280	9	1002.0	0.4	8.7	-0.9	75	79W	1004	5.5	0	12.0	0
5986	87	1	7	0	74.4	289.2	290	9	1000.0	-2.0	8.8	0.1	74	65W	1000	4.0	3	7.0	0
5986	87	1	7	6	73.7	294.3	300	8	997.6	-2.4	9.4	0.6	74	65W	998	4.5	3	12.0	1
5986	87	1	7	12	72.5	300.0	300	10	994.8	-2.8	10.4	1.0	72	57W	992	4.0	3	6.0	3
5986	87	1	7	18	72.1	301.5	310	3	994.4	-0.4	10.8	0.4	73	58W	996	4.0	3	7.0	0
5986	87	1	8	0	71.6	302.6	320	3	993.1	-1.3	11.1	0.3	70	55W	992	4.5	3	8.5	1

No. 5987 First Cyclone of February 87

CYCLONE NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
5987	87	2	1	18	50.0	250.5	*	*	992.3	*	13.4	*	51	115W	994	6.0	2	9.5	0
5987	87	2	2	0	49.5	253.8	280	11	991.1	-1.2	14.0	0.6	50	109W	990	5.0	5	7.5	1
5987	87	2	2	6	48.7	257.4	290	13	991.2	0.1	14.1	0.1	49	104W	990	3.0	4	7.0	0
5987	87	2	2	12	47.7	262.3	290	17	992.0	0.8	14.1	0.0	48	97W	992	4.0	5	8.0	3
5987	87	2	2	18	46.6	267.2	290	18	993.4	1.4	13.2	-0.9	47	94W	994	3.5	3	6.0	1
5987	87	2	3	0	45.5	272.3	290	19	994.8	1.4	11.9	-1.3	45	87W	994	4.5	3	9.0	2
5987	87	2	3	6	44.7	277.4	280	19	996.6	1.8	10.5	-1.4	44	82W	996	5.5	3	12.0	1
5987	87	2	3	12	44.2	282.4	280	19	998.6	2.0	9.3	-1.2	44	79W	1000	7.0	3	15.0	0
5987	87	2	3	18	44.2	287.5	270	19	999.8	1.2	8.3	-1.0	43	72W	1000	8.5	3	16.0	0
5987	87	2	4	0	44.7	292.2	260	18	1001.0	1.2	7.3	-1.0	44	66W	1000	9.5	3	17.0	0
5987	87	2	4	6	45.4	296.2	250	15	1002.2	1.2	6.5	-0.8	45	64W	1002	11.0	1	19.0	0
5987	87	2	4	12	46.0	298.9	250	10	1003.6	1.4	6.0	-0.5	48	58W	1006	16.0	0	24.0	0
5987	87	2	4	18	46.2	300.4	260	6	1003.1	-0.5	5.8	-0.2	46	56W	1002	13.0	1	20.0	0

No. 6081 Last Cyclone of February 87

CYCLONE 6081

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
6081	87	2	28	0	45.1	61.7	*	*	1008.6	*	14.9	*	44	61E	1008	5.5	4	9.0	2
6081	87	2	28	6	45.8	62.1	200	4	1008.7	0.1	15.0	0.1	45	62E	1010	5.5	5	9.5	1
6081	87	2	28	12	46.9	62.5	200	6	1008.0	-0.7	15.2	0.2	46	62E	1008	4.5	4	9.0	2
6081	87	2	28	18	48.4	63.2	200	8	1007.8	-0.2	15.2	0.0	48	63E	1006	4.5	5	7.5	3
6081	87	3	1	0	50.1	64.0	200	9	1009.0	1.2	14.3	-0.9	50	64E	1008	5.0	5	7.5	2
6081	87	3	1	6	51.6	64.8	200	8	1011.6	2.6	12.6	-1.7	52	65E	1012	6.0	3	10.0	2
6081	87	3	1	12	52.6	65.3	200	5	1013.8	2.2	11.0	-1.6	55	66E	1014	5.0	2	10.0	1
6081	87	3	1	18	52.9	65.5	210	2	1016.0	2.2	10.0	-1.0	53	66E	1018	9.5	2	14.5	1

No. 6083 First Cyclone of March 87

CYCLONE NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A	A*	B	B*
6083	87	3	1	6	35.6	144.7	*	*	1000.6	*	11.5	*	35	141E	1002	7	0 3	15	5 1
6083	87	3	1	12	36.2	146.9	250	10	997.1	-3 5	12.9	1.4	35	146E	1002	8	0 3	18	0 1
6083	87	3	1	18	37.1	149.4	250	11	991.0	-6.1	14.9	2.0	37	147E	992	4	0 5	8	0 3
6083	87	3	2	0	38.2	153.2	250	17	983.8	-7.2	17.1	2.2	38	153E	978	1	5 5	3	5 5
6083	87	3	2	6	39.6	157.5	250	19	981.0	-2 8	18.0	0 9	39	156E	980	1	5 5	3	5 3
6083	87	3	2	12	41.3	162.2	240	20	980 2	-0.8	17.4	-0.6	41	162E	980	2	5 5	6	0 3
6083	87	3	2	18	43.3	166.5	240	19	980.6	0.4	16.3	-1.1	43	169E	982	4	5 3	8	5 3
6083	87	3	3	0	45.5	169.7	220	16	979 6	-1 0	15.6	-0.7	44	171E	980	3	0 3	6	0 3
6083	87	3	3	6	47.8	172.0	210	14	978.4	-1 2	15 3	-0.3	49	174E	978	3	0 3	6	5 3
6083	87	3	3	12	49.7	173.1	200	11	977 0	-1.4	15.5	0.2	51	173E	976	4	5 3	7	5 3
6083	87	3	3	18	51.3	173.6	190	8	976.4	-0.6	15.7	0.2	51	177E	978	4	0 3	7	0 3
6083	87	3	4	0	52.4	173.4	170	5	975.1	-1 3	15 8	0.1	53	172E	974	4	0 3	7	5 3
6083	87	3	4	6	53.1	173.4	180	4	974.6	-0 5	16.0	0.2	55	173E	974	3	0 3	5	5 3

No. 6186 Last Cyclone of March 87

CYCLONE 6186

NO	YR	MO	DY	GT	LA	LO	CD	CM	CP	PD	CW	WI	LA*	LO*	PC*	A.	A*	B.	B*
6186	87	3	31	18	38.4	22.3	*	*	1005.4	*	11.0	*	40	20E	1008	9.5	3	16.0	1
6186	87	4	1	0	38.1	23.0	290	3	1002.7	-2.7	12.0	1.0	37	23E	1006	10.0	3	17.5	1
6186	87	4	1	6	38.4	23.4	230	2	998.2	-4.5	13.4	1.4	37	25E	994	7.0	5	12.5	3
6186	87	4	1	12	39.1	23.4	180	3	996.0	-2.2	14.5	1.1	39	24E	996	7.0	5	11.0	3
6186	87	4	1	18	40.1	23.1	170	6	994.6	-1.4	14.7	0.2	40	23E	994	5.5	5	10.0	5
6186	87	4	2	0	41.4	22.5	160	7	995.4	0.8	13.8	-0.9	40	23E	994	6.0	4	10.5	0
6186	87	4	2	6	42.5	22.0	160	6	996.7	1.3	12.8	-1.0	44	22E	996	5.5	4	9.5	0
6186	87	4	2	12	43.2	21.5	150	4	999.1	2.4	11.8	-1.0	45	20E	1002	8.5	1	12.5	0

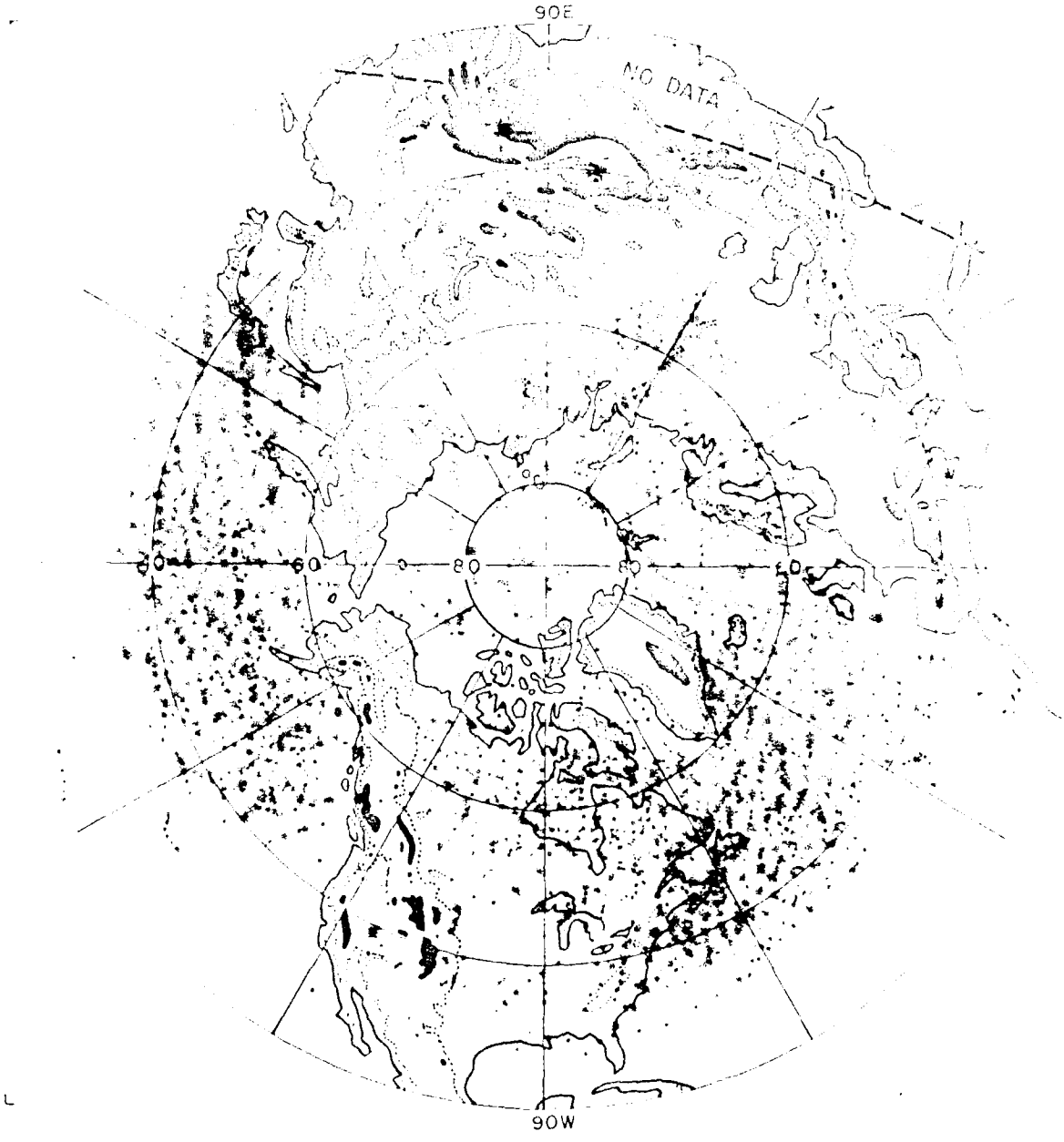

Fig. 1. A computer-generated map showing where cyclone deepening in various magnitude occured during the one-year period studied under this grant.

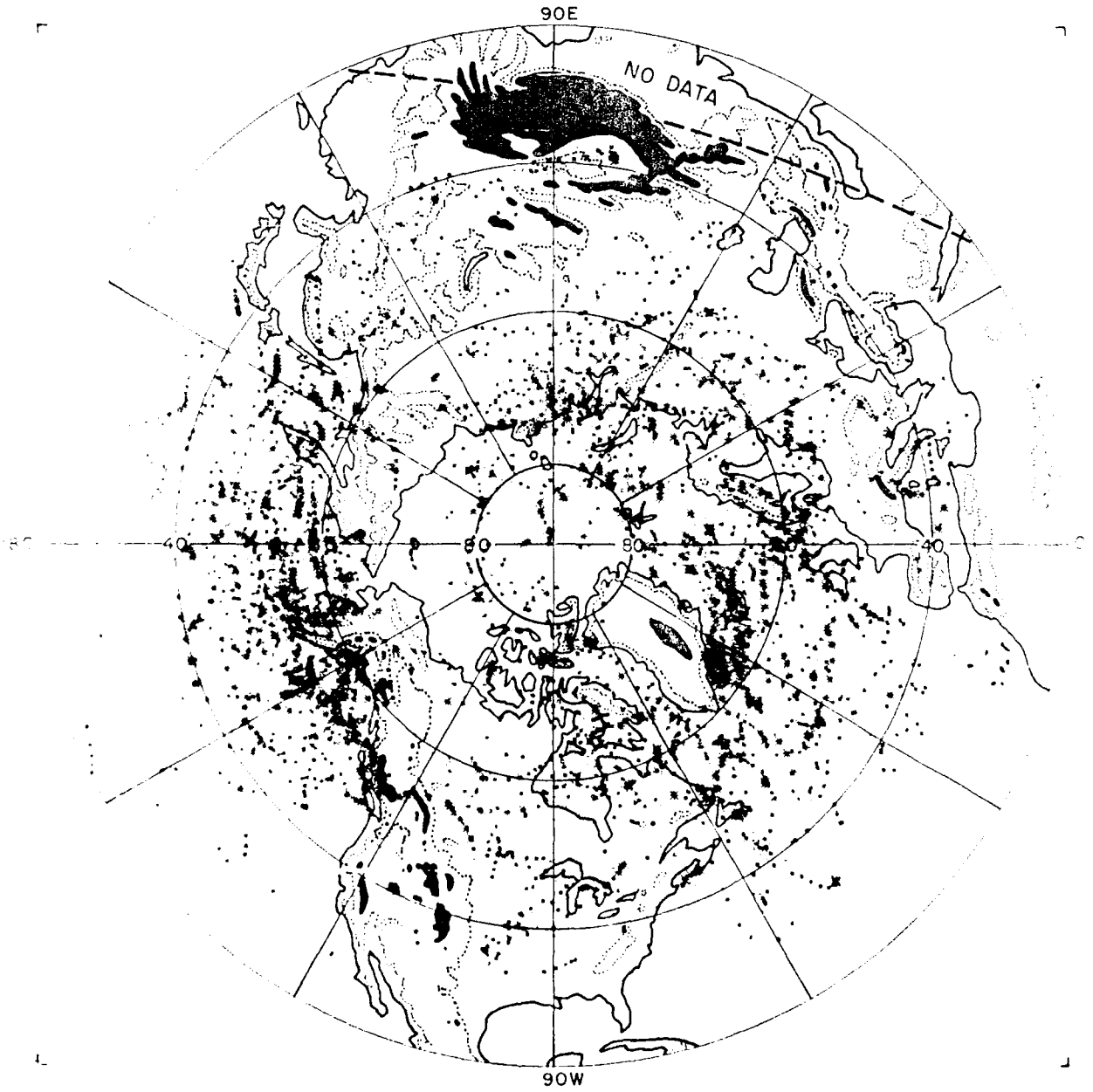

Fig. 2. A computer-generated map showing where cyclone filling in various magnitude occurred during the one-year period studied under this grant.